CUBIT Capability Proposal

Technical Area Geometry, Meshing, Infrastructure, GUI, Graphics, etc..	**Technical Lead** Cubit Developer in charge of technical area
Meshing	Mike Borden

MRD Description

Describe the capability in terms of how a user would see it.

Fix/Enhance the application of sizing in Cubit so that mesh sizing information is not lost or corrupted by geometry modifications.

SRS Description

What needs to be done by Cubit developers to implement this capability? Break the tasks into steps if applicable. (Steps should be on the order of 2 man-weeks or more)

1. Review the current interval setting behavior to determine precedent and propagation rules
2. Design and implement a smart sizing attribute. The attribute will only be set on an entity when a user specifically assigns a size to that entity or, if no size has been set, just prior to the entity being meshed

Justification

Describe why this is important and what impact it will have if it is implemented. (or not implemented).

Currently, if you assign a size to a volume, it immediately propagates down to all the curves in the volume and is set as an interval count. If the geometry is then modified, the interval count assigned to any modified curve is kept without changing. Since the length of the curve has changed, the interval setting becomes invalid because the interval assignment is based on the original curve length. In addition, the original interval assignments are not propagated to any new curves that may be created by the geometry modification. Another problem is that it is also possible for the intervals to be changed on a curve after the curve has been meshed. This can lead to unexpected results in later meshing operations (see bug #2733). The proposed fix will be one step toward removing the order dependence between geometry modifications and setting meshing parameters.

Resources Who will work on this	**Time estimate** How much time will it take in man-weeks	**Targeted Release** 10.2 (August 06), 10.3 (March 2007), 10.4 (August 2007), Future (beyond FY07)
Mike Borden – development Matt Staten, Byron Hanks – Consulting	15 man-weeks	10.3

Submitted By:	**Date:**
Mike Borden	April 3, 2006